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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,613	02/18/2004	Thomas Alexander Horn	CM2603CQ	2691

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EXAMINER

LAVINDER, JACK W

ART UNIT	PAPER NUMBER
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3677

DATE MAILED: 03/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

12

154

Office Action Summary

Application No.

10/781,613

Applicant(s)

HORN ET AL.

Examiner

Jack W. Lavinder

Art Unit

3677

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/18/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 10-12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claims 10-12, the specification discloses on page 2, lines 20-25

“One way to improve the integrity of a nonwoven web is to increase the amount of bonding of the constituent fibers. For example, a nonwoven web can be bonded to a backing layer in known ways, such that constituent fibers are bonded, or anchored to the backing layer. By increasing the bond area, more fibers can be anchored to the backing. However, increasing the bond area also increases the number of fibers that are not available for hook engagement. At 100% bond coverage, for example, each fiber would be anchored to avoid pulling away from the web, but there would be no fibers available for hook engagement.”

It is not understood why there wouldn't be any fibers for hook engagement? The hook element of the hook and loop fastener is an open hook that engages the loop of the loop element whether that loop is bonded to a backing layer or is hanging free from the backing layer. Either way, the hook can engage the loop. Please clarify.

The specification on page 11 reinforces my question. On page 11, lines 17-21, the specification discloses

Art Unit: 3677

"FIG. 2 shows one embodiment of a loop member 100 of the present invention. As shown, a nonwoven web 105 comprises a pattern of intersecting bond lines 110. The pattern of intersecting bond lines 110 serve to anchor the constituent fibers of nonwoven web 105 such that they offer more resistance to being pulled out when subjected to the forces of a mating hook element being disengaged. The pattern of intersecting bond lines 110 also serves to aid in increasing the shear forces required to unfasten a mating hook element by providing for limits on the lateral movement (i.e., parallel to the plane of the page of FIG. 2) of an engaged hook along the hooked fiber(s)."

This passage states that the fibers of nonwoven web, which are bonded to the backing web via bond lines, offer more resistance to being pulled out when subjected to the forces of a mating hook element being disengaged. Clearly, this shows that the hook elements can engage bonded nonwoven fibers of the web 105. One part of the specification states that the bonded fibers cannot be engaged by the hooks and the other portion of the specification states that it is desirable to have more bonded fibers to be engaged by the hooks to aid in increasing the shear forces required to unfasten the mating hook element.

In a third section of the specification, page 12, lines 19-24,

"As mentioned, one way to increase nonwoven web integrity (i.e., its resistance to constituent fibers from pulling loose) and thereby to increase the reliability of a loop fastening element, is to simply increase the number of straight bond lines in an intersecting pattern. However, doing so correspondingly increases the bond area and consequently decreases the quantity of fibers available for engaging with hook elements."

This passage is stating that an increase in the reliability of a loop fastening element is directly proportional to an increase in the number of bond lines. However, it also states that increasing the bond area decreases the quantity of fibers available for engaging with hook elements. This seems to contradict the previously cited passage, i.e., the

Art Unit: 3677

hooks can engage fibers that have been bonded to the adhesive lines. Please provide clarification.

Next, the specification discloses on page 15, first paragraph,

"In prior art nonwoven loop fasteners, higher nonwoven integrity was achieved by adding bond lines, while attempting to balance the needs of web integrity with the need to have a certain minimum number of fibers available for hook engagement. However, the increase in linear bond lines simply results in a directly proportional increase in contour. That is, in prior art linear bond patterns an increase in bond area was gained by a directly proportional gain in the number of anchored fibers. But since the overall bond area increased, such an increase in linear bond lines simply resulted in a directly proportional loss in total fibers available for engaging. This technical contradiction has been solved by the pattern of the present invention. Specifically, by the pattern of the present invention, the number of fibers anchored can be increased by increasing the contour, while not directly proportionally increasing overall bond area that reduces the number of fibers available for engaging hook members."

The above paragraph seems to contradict what applicant has shown in table 1. Table 1 shows applicant's tessellated pattern of adhesive contour and bond area per square centimeter. The table shows that an increase in the amplitude of the wave of adhesive pattern leads to a proportional increase in the contour per square centimeter and a proportional increase in the bond area, which the specification has disclosed in the previously cited paragraph as not being a desirable outcome. It is not clear what applicant is describing as the inventive feature. On the one hand, the disclosure states that it is undesirable to increase the bond area in proportion to an increase in the contour. However, table 1 shows just such a relationship exists, i.e., an increase in contour results in an increase in bond area. Please clarify and distinguish what the invention is. It appears that the increase in the number of straight lines obtains the

Art Unit: 3677

exact same result as applicant's invention, i.e., an increase in contour leads to an increase in bond area.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4 and 10-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Stumpf, 3687754.

Regarding claims 1-4 and 10-12, Stumpf, 3687754, discloses a loop member (see abstract) capable of being used in a mechanical hook and loop fastener. The loop member comprising a non-woven web (14) attached to a tessellating pattern of adhesive (col. 13, lines 60-end, figures 4, 5, and 31), i.e., a first set of sinusoidal lines of adhesive extending parallel to one another and a second set of sinusoidal lines of adhesive criss-crossing the first set (80, figure 31). Stumpf discloses that the bond lines and non-woven material can be assembled into a roll and later used (col. 6, lines 16-22) in the formation of another product.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

Art Unit: 3677

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stumpf, '754 in view of Romanek, 4446189.

Regarding claims 5 and 6, Stumpf discloses a sinusoidal wave pattern of adhesive in phase with each line (figure 31), but fails to disclose a wave pattern 180 degrees out of phase with each adjacent line.

Romanek discloses a sinusoidal wave pattern of bonding that is 180 degrees out of phase with each adjacent line of bonding (figure 14) and a sinusoidal wave pattern of bonding in phase with each adjacent line of bonding (figure 9). It is concluded that Romanek discloses that either type of wave pattern can be used to attach the webs to each other equally as well as the other.

It would have been an obvious choice in alternative design to use the out-of-phase wave pattern of bonding, as taught by Romanek, in place of Stumpf's in-phase wave pattern of bonding for the reasons indicated above.

Regarding claim 7, Romanek discloses the use of cardable fibers as the nonwoven web material (col. 8, line 15). Therefore, it would have been an obvious design choice to use old and well known materials, such as cardable staple type fibers, in place of Stumpf's fibers since either material performs the identical function of providing loops in a nonwoven web equally as well as the other and since the specification has failed to disclose any criticality with use of the specific nonwoven webs (see page 10, lines 28-29).

Art Unit: 3677

7. Claims 1-4 and 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over King, 5595567, in view of Stumpf, '754.

Regarding claims 1, 2, 3, 4 and 8-9, King discloses a loop member (37) bonded to a backing member (31) via a criss-cross pattern of adhesive (figures 2 and 3). King fails to disclose a tessellating pattern of intersecting sinusoidal waves of adhesive.

Stumpf, 3687754, discloses a loop member (see abstract) capable of being used in a mechanical hook and loop fastener. The loop member comprising a non-woven web (14) attached to a tessellating pattern of adhesive (col. 13, lines 60-end, figures 4, 5, and 31), i.e., a first set of sinusoidal lines of adhesive extending parallel to one another and a second set of sinusoidal lines of adhesive criss-crossing the first set (80, figure 31). Stumpf discloses that the bond lines and non-woven material can be assembled into a roll and later used (col. 6, lines 16-22) in the formation of another product.

It would have been an obvious choice in design to substitute a sinusoidal wave pattern of adhesive, as taught by Stumpf, in place of King's straight line pattern of adhesive, since the specification fails to clearly and specifically state the criticality of having a sinusoidal pattern over a straight pattern and it appears that either pattern of adhesive works equally as well as the other.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack W. Lavinder whose telephone number is 703-308-3421. The examiner can normally be reached on Mon-Friday, 9-4:00pm.

Art Unit: 3677

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Swann can be reached on 703-306-4115. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jack W Lavinder
Primary Examiner
Art Unit 3677

3/7/05